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Pteridophytes and Gymnosperms

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2b. **Pentagramma triangularis** (Kaulfuss) Yatskievych, Windham, & E. Wollenweber subsp. **semipallida** (J. T. Howell) Yatskievych, Windham, & E. Wollenweber, Amer. Fern J. 80: 16. 1990

Pityrogramma triangularis (Kaulfuss) Maxon var. *semipallida* J. T. Howell, Leafl. W. Bot. 9: 223. 1962

Petiole glabrous, not viscid-glandular. **Blade** thin and herbaceous, sometimes thick (but not leathery), not viscid-glandular, abaxially densely white-farinose, adaxially glabrous. **Distal pinnae** mostly regularly lobed. **Proximal basiscopic lobes** of basal pinnae pinnatifid, often deeply so.

Chaparral, pine and oak woodlands; 100–900 m; Calif.

Pentagramma triangularis subsp. *semipallida,* as here treated, remains heterogeneous. Diploid (based on spore size) populations occur in the foothills of the Sierra Nevada in Butte County, California. Tetraploids (based on spore size) of similar morphology are apparently restricted to Santa Barbara County, California, including the adjacent Channel Islands. The relationship between these two variants has not been studied in detail.

2c. **Pentagramma triangularis** (Kaulfuss) Yatskievych, Windham, & E. Wollenweber subsp. **triangularis**

Petiole glabrous, not viscid-glandular. **Blade** thin and herbaceous to somewhat thick and leathery, not viscid-glandular, abaxially densely pale to bright yellow, adaxially glabrous. **Distal pinnae** mostly regularly lobed. **Proximal basiscopic lobes** of basal pinnae pinnatifid, often deeply so. $2n = 60$, ca. 90, 120.

Chaparral, pine and oak woodlands; 50–1800 m; B.C.; Calif., Idaho, Oreg., Wash.; Mexico in Baja California.

We here restrict *Pentagramma triangularis* subsp. *triangularis* to plants with yellow farina and glabrous adaxial leaf surfaces occurring throughout a large region in westernmost North America. This subspecies comprises a complex of morphological, cytological, and phytochemical variants, at least some of which may deserve formal taxonomic recognition, following more detailed studies. Plants with yellow farina reported from Arizona, Nevada, and Utah may represent tetraploid hybrids between *P. triangularis* subsp. *triangularis* and *P. triangularis* subsp. *maxonii* and are not mapped herein.

2d. **Pentagramma triangularis** (Kaulfuss) Yatskievych, Windham, & E. Wollenweber subsp. **viscosa** (Nuttall ex D. C. Eaton) Yatskievych, Windham, & E. Wollenweber, Amer. Fern J. 80: 15. 1990

Gymnogramma viscosa Nuttall ex D. C. Eaton, Ferns N. Amer. 2: 16. 1879; *Pityrogramma triangularis* (Kaulfuss) Maxon var. *viscosa* (Nuttall ex D. C. Eaton) Weatherby; *P. viscosa* (Nuttall ex D. C. Eaton) Maxon

Petiole sometimes viscid-glandular. **Blades** thick and leathery, abaxially densely white-farinose and viscid-glandular, adaxially viscid-glandular. **Distal pinnae** mostly entire. **Proximal basiscopic lobes** of basal pinnae entire to undulate or crenate. $2n = 60$.

Chaparral, pine and oak woodlands; 50–500 m; largely coastal; Calif.; Mexico in Baja California.

Pentagramma triangularis subsp. *viscosa* was said to introgress with *P. triangularis* subsp. *triangularis* by K. S. Alt and V. Grant (1960), who noted both diploid and tetraploid plants of intermediate morphology at some sites where these two occur together.

9. BOMMERIA E. Fournier in Baillon, Dict. Bot. 1: 448. 1877 [Named for the Belgian pteridologist Jean Edouard Bommer 1829–1895]

Christopher H. Haufler

Plants terrestrial. **Stems** prostrate, long-creeping, often branched [short, seldom branched]; scales pale brown to yellowish, lanceolate, concolored, margins entire. **Leaves** monomorphic, scattered, 4–30 cm. **Petiole** chestnut brown to dark purple, rounded or with single groove adaxially, indument of scales and/or trichomes, especially proximally and distally, with single vascular bundle. **Blade** pentagonal, pedately divided into 3 segments, deeply pinnate-pinnati-